



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/575,171

04/07/2006

Young-lak Kim

126587-0033

7229

22429

7590

03/03/2010

LOWE HAUPTMAN HAM & BERNER, LLP
1700 DIAGONAL ROAD
SUITE 300
ALEXANDRIA, VA 22314

EXAMINER

PATEL, MUNJALKUMAR C

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

03/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,171	Applicant(s) KIM, YOUNG-LAK	
	Examiner Munjal Patel	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant has cancelled claims 5, 8, 31 & 32. The examiner acknowledges it.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 1, 2, 4-7, and 9-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amerga et al (US Patent # US 7,110,765 B2)** as applied to claims above, herein after referred as **Amerga**, and further in view of **Choi et al.(US Patent # US 7,096020 B2)** herein after referred as **Choi**.

5. **Regarding claim 1, Amerga** discloses a method of switching between a WCDMA modem and a CDMA-2000 modem of an MM-MB (multimode-multiband) terminal (**Amerga: Fig 3 & column 5 lines [43-48] discloses system which can perform modem switching (WCDMA & CDMA-2000) in a system, which is**

Art Unit: 2617

multimode-multiband functionality), when the MM-MB terminal being in a WCDMA idle state (**Amerga: column 5 lines [43-46] discloses WCDMA system & Col 4 lines [45-48] discloses idles mode cell reselection**) moves from an overlay zone into a CDMA-2000 zone (**Amerga: column 5 lines [47-48] discloses CDMA2000 system**), said method comprising the steps of:

- (a) receiving a WCDMA signal transmitted from a WCDMA system (**Amerga: Fig 2: tuning receiver 220**), and measuring (**Amerga: Column 6, lines [12-16] Signal strength estimator**) an E_c/I_o (energy of carrier/interference of others) value by using the WCDMA signal (**Amerga: Col 8 line [45] discloses E_c/I_o measurement**);
- (b) determining (**Amerga: Column 6 lines [64-67] decision block 320, column 7 lines [1-6]**) whether the E_c/I_o (**Amerga: Column 8, lines [45-46], Fig 5A & 5B, step 330**) value is lower than a predetermined CDMA-2000 ON threshold TH_{oN} (**Amerga: Column 8 lines [47] $Q_{qual\ min}$ = threshold for minimum required quality level of the cell**);
- (c) if it is determined at step (b) that the E_c/I_o value is lower than TH_{oN} (**Amerga: Column 8 lines [35] Equation Squal**), starting to measure a time lapse (**Amerga: Column 8, lines [11-14] fig 3: DRX cycle**), wherein the time lapse is a cumulative time during which the E_c/I_o value remains lower than the CDMA-2000 ON threshold TH_{oN} (**Amerga: Fig 5A & column 10 lines [44-49] discloses a timer that indicates how long (cumulative) a cell has met the selection criteria**), and determining whether the time lapse exceeds a preset CDMA-2000 ON condition time H_d (**Amerga: Column 9 lines [15] N cycles**);

Art Unit: 2617

(d) if it is determined at step (c) that the time lapse exceeds H_d , activating the CDMA-2000 modem (**Amerga: Column 9 lines [12-17]**), and

(e) performing an initialization for a CDMA-2000 system to switch the MM-MB terminal from the WCDMA idle state into a CDMA-2000 idle state (**Amerga: Fig 5A & 5B, Column 9 lines [12-17][21-57]**).

6. **However, Amerga** fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state. **However**, the examiner maintains that it was well known in the art to provide Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem (**Choi: Fig 2, 3 & Column 3 lines [56-57]**) & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi** (**Choi: Col 6 lines [58] - Col 7 lines [17] discloses process of Soft handoff between WCDMA and CDMA2000, hence current call connection has to remain active till the next call connection is confirmed and functional before releasing current connection**).

7. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Multi Mode-Multi Band terminal which has CDMA-2000 modem, WCDMA modem & the CDMA-2000 modem is activated before the MM-MB

Art Unit: 2617

terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state.

8. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi** for the purpose of implementing Soft handoff between heterogeneous networks (**Choi: Column 2 lines [41-45]**).

9. **Regarding claim 2, Amerga** in view of **Choi** discloses the method of claim 1, wherein the MM-MB terminal (**Choi: Fig 2, 3 & Column 3 lines [56-57]**) inspects a CPICH (common pilot channel) periodically to receive the WCDMA signal at step (a) (**Amerga: column 7 lines [59-65]**). This claim is rejected for the same motivation as claim 1.

10. **Regarding claim 4, Amerga** in view of **Choi** discloses everything in claim 1 as above, along with initialization at step (e) is performed 'through a system determination sub state (**Amerga: Fig 5A: 504**), a pilot channel acquisition sub state (**Amerga: Fig 5A: 502**) and a synchronous channel acquisition sub state (**Amerga: Fig 5A: 552**). This claim is rejected for the same motivation as claim 1.

Art Unit: 2617

11. **Regarding claim 5, Amerga** in view of **Choi** discloses everything in claim 1 as above along with after being switched (**Amerga: Fig 5A, 5B & column 9 lines [12-17][21-57]**) into the CDMA-2000 idle state at step (e), the MM-MB terminal deactivates the WCDMA modem (**Amerga: column 8 lines [11-28]**). This claim is rejected for the same motivation as claim 1.

12. **Regarding claim 6, Amerga** discloses a method of switching between a WCDMA modem and a CDMA-2000 modem of an MM-MB terminal, when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call, said method comprising the steps of:

(a) while the MM-MB terminal is handling the WCDMA call by the active WCDMA modem (**process of soft handover**), receiving a WCDMA signal transmitted from a WCDMA system, and measuring an E_c/I_o (energy of carrier/interference of others) value by using the WCDMA signal (**Amerga: column 8 lines [30-48] discloses measurement of E_c/I_o using WCDMA signal**);

(b) determining (**Amerga: column 6 lines [64-67] decision block 320, column 7 lines [1-6]**) whether the E_c/I_o value (**Amerga: column 8 lines [45-46], Fig 5A & 5B, step 330**) is lower than a predetermined CDMA- 2000 ON threshold TH_{ON} (**Amerga: column 8 lines [47] $Q_{qual\ min} = \text{threshold for minimum required quality level of the cell}$**);

(c) if it is determined at step (b) that the E_c/I_o value is lower than TH_{ON} (**Amerga: column 8 lines [35] Equation Squal**), starting to measure a time lapse (**Amerga:**

Art Unit: 2617

Column 8 lines [11-14], Fig 3:DRX cycle), wherein the time lapse is a cumulative time during which the E_c/I_o value remains lower than the CDMA-2000 ON threshold TH_{ON} **(Amerga: Fig 5A & Column 10 lines [44-49] discloses a timer that indicates how long (cumulative) a cell has met the selection criteria)**, and determining **(Amerga: column 8 lines [11-14], Fig 3: determining based on consecutive DRX cycles)** whether the time lapse exceeds a preset CDMA-2000 ON condition time H_d **(Amerga: column 9 lines [15] N cycles)**;

(d) before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still actively handling the WCDMA call if it is determined at step (c) that the time lapse exceeds H_d , activating the CDMA-2000 modem **(Amerga: column 9 lines [12-17])**, and then determining whether the WCDMA call has been terminated **(Amerga: Fig 5A & 5B : 550, 552)**; and (e) if the WCDMA call is determined at step (d) to have been terminated, performing an initialization for a CDMA-2000 system to switch **(Amerga: Fig 5A, 5B & column 9 lines [12-17][21-57])** the MM-MB terminal into a CDMA-2000 idle state **(Amerga: column 9 lines [12-17][21-23])**.

However, Amerga fails to disclose specifically when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call & while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated (The examiner assumes this feature as While the MM-MB terminal is handling the WCDMA call by the active WCDMA modem), receiving a WCDMA signal transmitted from a WCDMA system, and measuring an E_c/I_o (energy of carrier/interference of others) value by using the WCDMA signal. **However, the**

Art Unit: 2617

examiner maintains that it was well known in the art to provide when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call as taught by **Choi (Choi: Col 6 lines [58] - Col 7 lines [17] discloses Dual band dual mode terminal, further on column 4 lines [57-60] discloses terminal also supplies power to CDMA unit i.e. terminal moves from overlay zone in to CDMA zone while handling a WCDMA call)** while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated (**The examiner assumes this feature as “While the MM-MB terminal is handling the WCDMA call by the active WCDMA modem” i.e. process of soft handover**), receiving a WCDMA signal transmitted from a WCDMA system, and measuring an E_c/I_o (energy of carrier/interference of others) value by using the WCDMA signal.(**Choi: Fig 2, 3 & Column 3 lines [56-57]**) & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi (Choi: Col 6 lines [58] - Col 7 lines [17] discloses process of Soft handoff between WCDMA and CDMA2000, hence current call connection has to remain active till the next call connection is confirmed and functional before releasing current connection).**

13. In a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call & while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated, receiving a

Art Unit: 2617

WCDMA signal transmitted from a WCDMA system, and measuring an E_c/I_o (energy of carrier/interference of others) value by using the WCDMA signal & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state.

14. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call & while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated, receiving a WCDMA signal transmitted from a WCDMA system, and measuring an E_c/I_o (energy of carrier/interference of others) value by using the WCDMA signal & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi** for the purpose of implementing Soft handoff between heterogeneous networks (**Choi: Column 2 lines [41-45]**).

15. **Regarding claim 7, Amerga** in view of **Choi** discloses the method of claim 6, wherein the MM-MB terminal inspects a CPICH (common pilot channel) periodically to receive the WCDMA signal at step (a) (**Amerga: Column 8 lines [59-65]**); and the CDMA-2000 modem is activated in step (d) while the WCDMA call is still being handled by the WCDMA modem (**Choi: Column 7 lines [09-17]**). This claim is rejected

Art Unit: 2617

for the same motivation as claim 6.

16. **Regarding claim 9, Amerga** in view of **Choi** discloses the method of claim 6, wherein, if the WCDMA call is determined at step (d) to have not been terminated, the method further includes the steps of:

(d1) determining (**Amerga: Fig 3:320**) whether the E_c/I_o value (**Amerga: Column 8 lines [45-46], Fig 5A, 5B , step 330**) is higher than a predetermined CDMA- 2000 OFF threshold TH_{OFF} (**Amerga: Fig 5A & Column 10 lines [44-49]**) which is lower than TH_{ON} (**Amerga: $S_{intrasearch}$ Floor (higher threshold)**);

(d2) if it is determined at step (d1) that the E_c/I_o value (**Amerga: Column 8 lines [45-46], Fig 5A, 5B , step 330**) is higher than TH_{OFF} , starting to measure another time lapse, wherein said another time lapse is a cumulative time during which the E_c/I_o value remains higher than TH_{OFF} (**Amerga: Col 10 lines [44-49] discloses use of timers to calculate how long the cell criteria was met, hence it is cumulative time, also further discloses in Col 9 lines [24-42] regarding various different way to use threshold to trigger monitoring cell, applicant is using a range with upper and lower bound, Amerga is using $S_{intrasearch}$ Floor (higher threshold)**), and determining whether said another time lapse exceeds a preset CDMA-2000 OFF condition time H_c (**Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21]**); and

(d3) if it is determined at step (d2) that said another time lapse exceeds H_c , deactivating the CDMA-2000 modem that has been activated at step (d) and returning to step (a) (**Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21]**). This claim is rejected for the

Art Unit: 2617

same motivation as claim 6.

17. **Regarding claim 10, Amerga** in view of **Choi** discloses the method of claim 9, wherein, if it is determined at step (d1) that the E_c/I_o value is not higher than $THoFF$ the MM-MB terminal returns to step (d) to determine **(Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21])** once more whether the WCDMA call has been terminated This claim is rejected for the same motivation as claim 9.

18. **Regarding claim 11, Amerga** in view of **Choi** discloses the method of claim 9, the CDMA-2000 modem is deactivated at step (d3) regardless of whether the E_c/I_o value is higher than $THoN$ or not **(Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21])**. This claim is rejected for the same motivation as claim 9.

19. **Regarding claim 12, Amerga** in view of **Choi** discloses the method of claim 10, wherein, if it is determined at step (d2) that the another time lapse does not exceed the CDMA-2000 OFF condition time H_c the MM-MB terminal returns to step (d) to determine once more whether the WCDMA call has been terminated **(Amerga: Fig 5A: 506, 508 & 554)**. This claim is rejected for the same motivation as claim 10.

20. **Regarding claim 13, Amerga** in view of **Choi** discloses the method of claim 6, wherein step (e) further includes the sub-steps of:
(el) inspecting another service channel FA (frequency assignment) of the WCDMA

system (**Amerga: Fig 5B: 510**);

(e2) determining whether another WCDMA signal is found (**Amerga: Fig 5B:512, 514**);

and

(e3) if said another WCDMA signal is found, switching the MM-MB terminal into a WCDMA idle state (**Amerga: Fig 5B:514 & Column 4 lines [58-60]**). This claim is rejected for the same motivation as claim 6.

21. **Regarding claim 14, Amerga** in view of **Choi** discloses the method of claim 13, wherein, if it is determined at sub- step (e2) that no other WCDMA signal is found, the MM-MB terminal performs said initialization into the CDMA-2000 system to be switched (**Amerga: Fig 5A & 5B & Column 9 lines [12-17][21-57]**) into said CDMA-2000 idle state (**Amerga: Fig 3:330-370 & Column 8 lines [65-68]**). This claim is rejected for the same motivation as claim 13.

22. **Regarding claim 15, Amerga** in view of **Choi** discloses the method of claim 14, wherein, after being switched (**Amerga: Fig 5A & 5B & Column 9 lines [12-17][21-57]**) into the CDMA-2000 idle state, the MM-MB terminal deactivates the WCDMA modem. This claim is rejected for the same motivation as claim 14 along with claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

23. **Regarding claim 16, Amerga** discloses a method of switching between a

Art Unit: 2617

CDMA-2000 modem and a WCDMA modem of an MM-MB (multimode-multiband) terminal, when the MM-MB terminal being in a CDMA-2000 idle state moves from a CDMA-2000 zone into an overlay zone, said method comprising the steps of:

(a) monitoring **(Amerga: Fig 3:310, 320, 330)** a paging channel of a CDMA-2000 system periodically while maintaining the MM-MB terminal in the CDMA-2000 idle state **(Amerga: Fig 5A, 5B & Column 4 lines [58-61] & Column 5 lines [47-48] discloses a paging channel of the serving cell, in this case it will be the CDMA-2000 as MM-MB terminal is maintained in CDMA-2000 idle state);**

(b) analyzing an overhead message received from the CDMA-2000 system and determining whether the MM-MB terminal is located in the overlay zone **(Amerga: Fig 5A: 504-506-508, & Fig 5B);**

(c) if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem **(Amerga: Fig 3:350-360)** while maintaining the CDMA-2000 modem in an activated state **(The examiner assumes this feature as “While the MM-MB terminal is handling the CDMA2000 call by the active CDMA modem” i.e. process of soft handover);** and

(d) performing an initialization process for a WCDMA system to switch **(Amerga: Fig 5A, 5B & Column 9 lines [12-17][21-57])** the MM-MB terminal from the CDMA-2000 idle state into a WCDMA idle state **(Amerga: Fig 3:370). However, Amerga fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an**

Art Unit: 2617

activated state, **however**, the examiner maintains that it was well known in the art to provide a terminal with multi-mode multi-band which has CDMA modem and WCDMA modem which serves functionally same as MM-MB terminal if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an activated state as taught by **Choi (Choi: Fig 2, 3 & Column 3 lines [56-57] & Col 6 lines [58] - Col 7 lines [17] discloses process of Soft handoff between WCDMA and CDMA2000, hence current call connection has to remain active till the next call connection is confirmed and functional before releasing current connection).**

24. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an activated state.

25. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an activated state as taught by **Choi** for the purpose of implementing handoff between heterogeneous networks (**Choi: Column 2 lines [41-45]**).

Art Unit: 2617

26. **Regarding claim 17, Amerga** in view of **Choi** discloses the method of claim 16, wherein the MM-MB terminal determines (**Amerga: Fig 5A, 5B**) whether the MM-MB terminal is located in the overlay zone by investigating a base ID of a system parameter message included in the overhead message analyzed at step (b). **Although Choi** discloses BSC ID, Cell ID (**Choi: Col 2 lines [20-35]**). **However, Amerga** in view of **Choi** fails to disclose explicitly “by investigating a base ID of a system parameter message included in the overhead message analyzed at step (b)”.

27. **However** it is obvious to one of ordinary skill in the art that one of the main advantages of implementing CDMA technology is the use of soft handoffs, which allows a mobile device to monitor multiple base stations simultaneously. Further, it is common practice for the current base station to provide information (*i.e.* PN code offsets) of the surrounding neighboring cells in order for the mobile device to easily monitor the signal strength of the handoff candidates in order to facilitate fast acquisition and accurate measurements during soft handover.

28. **Regarding claim 18, Amerga** in view of **Choi** discloses the method of claim 16, wherein, if the MM-MB terminal is not determined to be located in the overlay zone at step (b), the MM-MB terminal returns to step (a) to monitor the paging channel again (**Amerga: Fig 3:310-330**). This claim is rejected for the same motivation as claim 16.

29. **Regarding claim 19, Amerga** in view of **Choi** discloses the method of claim 16, wherein, after being switched into the WCDMA idle state (**Amerga: Fig 5A, 5B & Col. 9**

Art Unit: 2617

lines [12-17],[21-57]), the MM-MB terminal deactivates the CDMA-2000 modem. This claim is rejected for the same motivation as claim 16 along with the claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

30. **Regarding claim 20, Amerga** discloses a method of switching between a CDMA-2000 modem and a WCDMA modem of an MM-MB (multimode-multiband) terminal, when the MM-MB terminal being in a CDMA-2000 traffic state moves from a CDMA-2000 zone into an overlay zone, said method comprising the steps of:
- (a) monitoring a paging channel of a CDMA-2000 system periodically while maintaining the MM-MB terminal in the CDMA-2000 traffic state and the CDMA modem in an activated state to handle a CDMA-2000 call **(Amerga: Fig 3:310-330 & Col 4 lines [48-52] that his invention can readily adaptable in any mode (i.e. traffic mode as well))**;
 - (b) analyzing an overhead message received from the CDMA-2000 system and determining whether the MM-MB terminal is located in the overlay zone **(Amerga: Fig 5A: 504, 506, 508)**;
 - (c) if the MM-MB terminal is determined to be located in the overlay zone, determining whether the CDMA-2000 call has been terminated while maintaining the MM-MB terminal in the CDMA-2000 traffic state **(Amerga: Fig 3:350-360 & Col 4 lines [48-52] that his invention can readily adaptable in any mode (i.e. traffic mode as well))**;
 - (d) if the CDMA-2000 call is determined to have been terminated, activating the

Art Unit: 2617

WCDMA modem (**Amerga** discloses cell selection (when there is no cell selected, hence first time or when there is no modem active) and reselection method); and (e) performing an initialization process for a WCDMA system (**Amerga**: Fig 5A & 5B column 9 lines [12-17][21-57]) to switch the MM-MB terminal into a WCDMA idle state (**Amerga**: Fig 3:370). However, **Amerga** fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem, however, the examiner maintains that it was well known in the art to provide a terminal with multi-mode multi-band which has CDMA modem and WCDMA modem which serves functionally same as MM-MB terminal as taught by **Choi** (**Choi**: Fig 2, 3 & Column 3 lines [56-57] & Col 6 lines [58] - Col 7 lines [17]).

31. In a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Dual mode dual band which has CDMA & WCDMA modem.

32. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with multi-band multi mode which has CDMA modem and WCDMA modem as taught by **Choi** for the purpose of implementing handoff between heterogeneous networks (**Choi**: Column 2 lines [41-45]).

33. Regarding claim 21, **Amerga** in view of **Choi** discloses the method of claim 20, wherein the MM-MB terminal determines (**Amerga**: Fig 5A, 5B) whether the MM-MB terminal is located in the overlay zone by investigating a base ID of a system parameter

Art Unit: 2617

message included in the overhead message analyzed at step (b). **Although Choi** discloses BSC ID, Cell ID (**Choi: Col 2 lines [20-35]**). **However, Amerga** in view of **Choi** fails to disclose explicitly “by investigating a base ID of a system parameter message included in the overhead message analyzed at step (b)”.

34. **However** it is obvious to one of ordinary skill in the art that one of the main advantages of implementing CDMA technology is the use of soft handoffs, which allows a mobile device to monitor multiple base stations simultaneously. Further, it is common practice for the current base station to provide information (*i.e.* PN code offsets) of the surrounding neighboring cells in order for the mobile device to easily monitor the signal strength of the handoff candidates in order to facilitate fast acquisition and accurate measurements during soft handover.

35. **Regarding claim 22, Amerga** in view of **Choi** discloses the method of claim 20, wherein, if the MM-MB terminal is not determined to be located in the overlay zone at step (b), the MM-MB terminal returns to step (a) to monitor the paging channel again (**Amerga: Fig 3:310-330**). This claim is rejected for the same motivation as claim 20.

36. **Regarding claim 23, Amerga** in view of **Choi** discloses the method of claim 20, wherein, after being switched (**Amerga: Fig 5A, 5B & Column 9 lines [12-17] [21-57]**) into the WCDMA idle state, the MM-MB terminal deactivates the CDMA-2000 modem. This claim is rejected for the same motivation as claim 20 along with the claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular

Art Unit: 2617

state will remain identical.

37. **Regarding claim 24, Amerga** discloses a multimode-multiband terminal capable of accommodating both a synchronous CDMA-2000 service and an asynchronous WCDMA service and operating in at least two frequency bands, said terminal comprising:

an RF (radio frequency) antenna (**Amerga: Fig 2:210**) for transceiving a CDMA-2000 signal and/or a WCDMA signal;

an RF transceiver (**Amerga: receiver 220 in column 6 line [40]**) coupled to the RF antenna for demodulating a WCDMA pilot signal received from the RF antenna and outputting the demodulated WCDMA pilot signal (**Amerga: output of demodulator 230 in column 6 lines [40]**);

a pilot signal measurement unit (**Amerga: Signal strength estimator 280 in Column 6 line[41]**) coupled to the RF transceiver for measuring an intensity of the demodulated WCDMA pilot signal to generate an E_c/I_o value;

a WCDMA modem (**Amerga: Modem described in column 6 line [32-34]**) and a CDMA-2000 modem (**Amerga: Modem described in column 6 line [32-34]**) coupled to the RF transceiver for processing a digital signal received from the RF transceiver (**Amerga: Receiver 220 in column 6 line [40] along with transmission capability described in column 6 lines [32-34]**) and performing a call processing according to protocols defined by a WCDMA standard (**Amerga: Column 5 lines [17-21]**) and a CDMA-2000 standard (**Amerga: Column 5 lines [17-21] & Column 3 lines [5-15]**),

Art Unit: 2617

respectively;

a memory (**Amerga: Fig 2:270**) for storing a modem-to-modem switching program configured (**Amerga: Column 6 lines [48-51]**) for switching (**Amerga: Modem described in column 6 lines [12-17][21-57]**) between the WCDMA modem (**Amerga: Modem described in column 6 lines [32-34]**) and the CDMA-2000 modem (**Amerga: Modem described in column 6 lines [32-34]**) based the E_c/I_o value; and

a controller (**Amerga: Processor described in column 6 lines [37-55]**) coupled to the pilot signal measurement unit, the memory and the WCDMA and CDMA-2000 modems for

(i) receiving the E_c/I_o value from the pilot signal measurement unit (**Amerga: Column 8 lines [45-56]**), and

(ii) loading and executing the modem-to-modem switching program (**Amerga: Instructions described in column 6 lines [48-51]**) from the memory to activate the CDMA-2000 modem (**Amerga: Modem described in column 6 lines [32-34]**) & activation takes place based on result of calculation of S_{qual} & S_{rxlev} which are based on E_c/I_o along with the threshold values $Q_{qualmin}$ & $Q_{rxlevmin}$), while the WCDMA modem is still being activated (**The examiner assumes this feature as “While the MM-MB terminal is handling the CDMA2000 call by the active CDMA modem” i.e. process of soft handover**), if a time lapse, during which the E_c/I_o value remains lower than a predetermined CDMA-2000 ON threshold TH_{ON} (**Amerga: $S_{intrasearch}$ Floor (higher threshold)**), is greater than a preset CDMA-2000 ON condition time H_d (**Amerga: Col 9 lines [12-17]**). However, Amerga fails to disclose specifically

Art Unit: 2617

Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem, **however**, the examiner maintains that it was well known in the art to provide a terminal with multi-mode multi-band which has CDMA modem and WCDMA modem which serves functionally same as MM-MB terminal as taught by **Choi (Choi: Fig 2, 3 & Column 3 lines [56-57] & Col 6 lines [58] - Col 7 lines [17])**.

38. In a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Dual mode dual band which has CDMA & WCDMA modem.

39. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with multi-band multi mode which has CDMA modem and WCDMA modem as taught by **Choi** for the purpose of implementing handoff between heterogeneous networks (**Choi: Column 2 lines [41-45]**).

40. **Regarding claim 25, Amerga** in view of **Choi** discloses The multimode-multiband terminal of claim 24, wherein the controller (**Amerga: Processor described in column 6 lines [37-55]**) loads the modem-to-modem switching program (**Amerga: Column 6 lines [48-51]**) at the moment the E_c/I_o value starts to be lower than the CDMA-2000 ON threshold TH_{oN} or when it is determined that the multimode-multiband terminal enters an overlay zone by analyzing system information. This claim is rejected for the same motivation as claim 24.

Art Unit: 2617

41. **Regarding claim 26, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, wherein, only after the CDMA-2000 modem has been activated and an initialization into a CDMA- 2000 system has been completed so that the multimode-multiband terminal has been completely switched into a CDMA-2000 idle state, does the controller deactivate the WCDMA modem. **However, Amerga** fails to disclose explicitly “the controller deactivates the WCDMA modem” as a part of cell reselection/hand off.

42. **However** it is obvious to one of the ordinary skill in the art that when switching modems in a MM-MB for the purpose of handover, it is necessary to deactivate the modem which is not being used for the purpose of conserving power as disclosed by **Amerga (Amerga: Abstract)**.

43. **Regarding claim 27, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, wherein, even if the CDMA-2000 modem has been activated, based on the E_c/I_o value being lower than $THoN$ during the time lapse greater than H_a , the controller still deactivates the CDMA-2000 modem if another time lapse, during which the E_c/I_o value is maintained higher than a predetermined CDMA-2000 OFF threshold $THoFF$, is greater than a preset CDMA-2000 OFF condition time H_c , wherein $THoN$ is greater than $THoFF$ (**Amerga: Fig 5A, 5B & column 9 lines [06-23] & $S_{intrasearch}$ Floor (higher threshold)**). This claim is rejected for the same motivation as claim 24.

44. **Regarding claim 28, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, wherein, only after the WCDMA modem has been activated and an initialization into a WCDMA system has been completed so that the multimode-multiband terminal has been completely switched (**Amerga: Fig 5A, 5B & Column 9 lines [12-17][21-57]**) into a WCDMA idle state, does the controller deactivate the CDMA-2000 modem. This claim is rejected for the same motivation as claim 24 along with claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

45. **Regarding claim 29, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 27, wherein information upon the CDMA-2000 ON threshold TH_{ON} , the CDMA-2000 ON condition time H_d , the CDMA-2000 OFF threshold TH_{OR} and the CDMA-2000 OFF condition time H_c are stored in the memory. This claim is rejected as **Amerga** discloses a processor 260 connected to memory which stores data along with instruction for performing various procedures and methods (**Amerga: Column 6 lines [47-51]**). This claim is rejected for the same motivation as claim 27.

46. **Regarding claim 30, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, further comprising a timer for measuring the time lapse and reporting the time lapse to the controller (**Amerga: Fig 5A & Col. 10 lines [44-49] discloses a timer that indicates how long (time lapse) the cell has met the selection criteria**). This claim is rejected for the same motivation as claim 24.

Response to Arguments

47. Applicant's arguments filed 11/09/2009 have been fully considered but they are not persuasive.

a. Applicant's argument on page 11 ¶ 0005 regarding claim 6 rejected by 35 U.S.C. 112 2nd paragraph are moot as rejection is withdrawn.

b. Applicant's argument on page 11 ¶ 0006 – page 12 ¶ 0001 regarding 35 U.S.C. 103(a) that Amerga's timer is not used for measuring the time lapse during which the Ec/Io value is below THon, however the Examiner respectfully disagree as purpose of measuring time lapse during which the Ec/Io value is below THon is to determine how long (cumulative) a cell has met the selection criteria (selection criteria is when the condition of Ec/Io value is below THon), Amerga discloses same functionality as cited, hence the Examiner's interpretation of timer being used for the measuring time lapse during which the Ec/Io value is below THon.

c. Applicant's argument on page 12 ¶ 0002 – page 13 ¶ 0001 regarding 35 U.S.C. 103(a) that Amerga in view of Choi fails to disclose WCDMA idle mode handover to CDMA system, however, the Examiner respectfully disagree as Amerga clearly discloses in Col 4 lines [45-48] regarding the possible modes for cell reselection includes idle modes as well.

d. Applicant's argument on page 13 ¶ 0002 – page 14 ¶ 0002 regarding 35 U.S.C. 103(a) regarding claim 6 & claim 9 is directed to the traffic state while cited teaching of Amerga is directed to the sleep mode or idle state. Applicant

Art Unit: 2617

also further asked for clarification regarding “if the WCDMA call is determined at step (d) to have been terminated” is not answered in last amendment, however the Examiner respectfully disagree as Amerga clearly discloses in Fig 5A & 5B : 550, 552 & Col 4 lines [48-52] that his invention can readily adaptable in any mode (i.e., Idle and traffic mode) after performing determination of handover. Claims 6 and claim 9 only provides two conditions to make a decision of handover, in claim 6 if WCDMA call is terminated & E_c/I_o value is lower than TH_{on} (i.e. system is in idle mode & entering CDMA-2000 coverage area) then perform the handover else as in claim 9 where call is active and E_c/I_o value is higher then TH_{off} (i.e. traffic mode where system is in active call & CDMA-2000 signals are not stronger and reliable than WCDMA coverage) so there is no need to perform handover (Amerga:Fig 3:360). Amerga clearly discloses conditions for cell selection and reselection that includes both the mode (Idle and traffic) as cited in previous and this office action.

e. Applicant’s argument on page 14 ¶ 0003 – page 14 ¶ 0004 regarding 35 U.S.C. 103(a) regarding claim 16 that Choi fails to disclose Idle-to-Idle transition, however, the examiner respectfully disagree as Amerga clearly discloses conditions for cell selection and reselection that includes both the mode (Idle and traffic) as cited in previous and this office action.

f. Applicant’s argument on page 14 ¶ 0005 – page 14 ¶ 0006 regarding 35 U.S.C. 103(a) regarding claim 20 that Amerga fails to teach if the call is terminated, however the examiner respectfully disagree as cited above and in

previous Office action, Amerga discloses Idle and traffic modes (Amerga:Col 4 lines [48-52]), In Idle mode can only be determined if the call is terminated.

g. Applicant's argument on page 14 ¶ 0007 – page 14 ¶ 0008 regarding 35 U.S.C. 103(a) regarding claim 24 that Amerga fails to teach “time for measuring the time lapse during which the Ec/Io value is below THon”. However, the examiner respectfully disagree as Amerga clearly shows (Amerga: Col 9 lines [12-17]) that N consecutive DRX cycles must fail to initiate cell selection/re-selection, hence the timer.

Conclusion

48. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2617

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Munjal Patel whose telephone number is (571)270-5541. The examiner can normally be reached on Monday - Friday 9:00 AM - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. P./
Examiner, Art Unit 2617

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617